

AMENDMENTS TO THE DRAWINGS

Substitute the attached drawing sheet for the drawing sheet for Figure 5 that is presently of record.

REMARKS

The application has been amended to correct the cited informalities, to distinguish the claimed invention over the cited prior art, and to place the application into a *prima facie* condition for allowance. Substantial care has been taken to avoid the introduction of any new subject matter into the application as a result of the foregoing amendments.

The abstract of the disclosure has been objected to as having a minor error. In particular, the Examiner has stated that in line 4, "liner" should be replaced with -- linear --. Applicant has accordingly amended the abstract, and submits that the Examiner's basis for objection to the abstract should be deemed overcome.

The specification has been objected on the basis of several informalities. In particular, the Examiner has identified the following informalities, making reference to the specification as originally filed, not as published:

Paragraph [0004], line 3, "combustion by A" should be replaced with -- combustion byproducts. A --;

Paragraph [0005], line 5, "U.S.N o." should be replaced with -- U.S. Patent No. -- ;

Paragraph [0006], line 4, "a" should be deleted;

Paragraph [0009], line 12, "translated" should be replaced with -- translates --;

Paragraph [0023], line 2, "closed" should be replaced with -- open --;

Paragraph [0024], line 2, "open" should be replaced with -- closed --;

Paragraph [0027], line 2 should be replaced with -- in Figure 2 and *in situ* installed in duct 2 in Figure 1 --;

Paragraph [0034], line 5, "hub 18" should be replaced with -- hub 80 --;

Paragraph [0039], line 8 "Figures 14 and 15." should be replaced with -- Figure 14. --.

Applicant has amended the specification as indicated, together with a few typographical corrections, and respectfully submits that all of the Examiner's bases for objection to the specification should be deemed overcome, and reconsideration and withdrawal of the objections to the specification are respectfully solicited.

Applicant has additionally amended paragraph [0038] (paragraph number in specification as filed), to change "frame 74" to -- frame 10 --, support for which is found, e.g., at paragraphs [0026], [0027], [0028], [0030] and others. Also, Fig. 5 has been amended to indicate space 76, which is identified in paragraphs [0032] and [0041] (paragraph nos. of specification as filed). Entry and acceptance of the foregoing amendments are respectfully solicited.

Claims 1, 5 - 7, 9, 14, 15 and 17 have been rejected under 35 U.S.C. 102(b) as being anticipated by *Meyer*, US 2,509,161. Claims 8 and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Meyer*. Claims 1 - 4, 10 - 12, 15, 16 and 18 - 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Bachmann et al.*, US 4,327,893, in view of *Meyer*. Applicant respectfully traverses the Examiner's substantive bases for rejection of the claims.

The *Meyer*'161 reference discloses a rack guide and pinion assembly, in which a frame holds a pinion, formed from two generally circular plates and a plurality of circumferentially arranged pins extending perpendicularly between the two plates. Cylindrical rollers surround each of the pins, ostensibly for reducing friction. A rack (which is either planar or T-shaped in cross-section) is inserted into the frame, and held against the pinion by two pressure rollers which bear against a longitudinally extending flat surface opposite the teeth of the rack. A crucial element of the cited rack and pinion assembly is the provision of a special bearing construction for the pinion. At col. 1, ll. 12 - 18 of the *Meyer*'161 reference, the bearing is said to comprise "two parallel plates in superposed spaced relation, with a circular opening in each plate, said openings registrable with each other, and the surfaces of said openings constituting raceways for, and hence adapted to be engaged in more or less constant contact by, the series of rollers constituting the pinion." The two parallel plates form the frame mentioned above.

Another crucial aspect of the device of the *Meyer*'161 reference is "the provision of a pair of face plates, each adapted to substantially contact the outer surface of a bearing plate and to overlie the circular opening therein, said face plates having disposed therebetween said series of rollers which are carried by and positioned

between the face plates through the instrumentality of pintles or rivets in such manner as to permit rotation of said rollers thereon.” Col. 1, ll. 20 - 28. The face plates have aligned hexagonal openings which are provided for the insertion of a hexagonal drive shaft, **but not for the journaling, alignment and support of the rollers themselves, with respect to the rack, as this function is accomplished by the interaction between the rollers and the openings in the bearing plates.**

Applicant’s amended claim 1 includes, among other limitations, the requirement that each of the pinion wheels has a center of rotation, and is rotatably driven *and* supported for rotation by a support shaft extending coaxially with the center of rotation of that pinion wheel. The antecedent basis for these amendments is provided in Figs. 3, 11a - 11c, and ¶ [0033]. This claimed construction is completely contrary to the pinion wheel construction and mode of operation that is taught and, as indicated above, indeed *emphasized* in the disclosure of the *Meyer* reference, namely by journaling the pinion wheels via contact between the rollers and the inner circumferential surfaces of the bearing plate apertures. Simply put, in contrast to Applicant’s invention, the (hex) tool that operates the *Meyers* pinion wheel must move in position and does not “support” the pinion wheel -- while Applicant’s support shaft does, indeed, support its pinion wheel. Therefore, Applicant respectfully submits that Applicant’s invention of amended claim 1 recites a structure which is neither disclosed, taught, suggested, or even permissible, from the teachings of the *Meyer* reference. Accordingly, applicant submits that the Examiner’s basis for rejection of independent claim 1 under 35 U.S.C. 102(b) based on the *Meyer* reference should be deemed overcome, and reconsideration and withdrawal of the rejection of independent claim 1, based on 35 U.S.C. 102(b) are respectfully solicited.

Independent claim 15 contains limitations substantially the same as those just discussed with respect to claim 1. As such, Applicant submits that the Examiner’s basis for rejection of independent claim 15 under 35 U.S.C. 102(b) based on the *Meyer* reference likewise should be deemed overcome. Reconsideration and withdrawal of the rejection of independent claim 15, based on 35 U.S.C. 102(b) are respectfully solicited.

With respect to the Examiner's rejection of independent claims 1 and 15, under 35 U.S.C. 103(a) based on the *Bachmann et al.* and *Meyer* references, Applicant firstly respectfully submits that the Examiner's purported combination of the *Meyer* and *Bachmann et al.* references is improper.

Two or more references may not be combined to support an assertion of obviousness of a claimed invention absent a teaching or suggestion to their combination. Further, two or more references may not be properly combined, if to do so would frustrate the functions, goals or purposes of one or more of the respective references.

The *Bachmann et al.* reference is directed to a blade damper construction, in which a rack and pinion drive is provided for lifting and lowering a blade damper. Racks are formed in each of the opposing sides of the blade damper, in particular for use in the environment of ducts leading, e.g., from combustion chambers to scrubbers and thence to a smokestack. Such devices are typically very large with a blade being several feet in height and weighing as much as several hundreds or more pounds.

The *Meyer* reference, by contrast, is directed to a small, self-contained rack and pinion unit which is intended to be used for small scale applications, such as for driving a section of a skylight or greenhouse roof (col. 3, ll. 45 - 50). The rack is completely surrounded by the bearing plates and facing plates, and incorporates bearing rollers on the side of the rack opposite the single row of teeth, a structure which could not practicably be used in the environment of a large scale exhaust duct.

Therefore, Applicant respectfully submits that one seeking to modify the structure of a blade or guillotine damper, such as that disclosed in the *Bachmann et al.* reference, would not be prompted in any way to look to a reference disclosing a self-contained rack and pinion structure, such as that disclosed in the *Meyer* reference, much less adopt the teachings of that reference. Combination is further frustrated by an attempt to combine references that utilize wholly different pinion "shaft" structures. Accordingly, Applicant submits that there is no teaching or suggestion for the combination of those references, and thus, the Examiner's proposed combination of

those references is improper and may not be used as a basis for rejection of the claims under 35 U.S.C. 103(a).

Even if the *Bachmann et al.* and *Meyer* references could properly be combined, which combination Applicant respectfully traverses, the resulting construction remains incapable of even remotely teaching or suggesting the patentably distinguishing structure and mode of operation of Applicant's invention of amended claims 1 and 15. Specifically, even if the *Bachmann et al.* blade or guillotine damper were to be modified to have the pinion wheels of *Meyer* instead of gears, those pinion wheels would have to be journaled in bearing plates, and not by a central shaft, as that would be a further, and impermissible, modification of the apparatus of the *Meyer* reference. As has been established hereinabove, one of the *crucial* features of the *Meyer* reference is the provision of the bearing plates, having circular openings that serve as raceways for the rollers of the pinion wheels. Thus, the combination proposed by the Examiner would be required to have the pinion wheels journaled by means of bearing plates, and could not be further modified to have the pinion wheels journaled by a central shaft.

For the foregoing reasons as well, then, Applicant submits that Applicant's invention of amended independent claims 1 and 15 should be deemed to patentably distinguish over the proposed combination of the *Bachmann et al.* and *Meyer* references, and that the Examiner's basis for rejection of those claims should be deemed overcome. Reconsideration and withdrawal of the rejection of independent claims 1 and 15, and allowance thereof, are respectfully solicited.

Inasmuch as dependent claims 2 - 14 and 16 - 21 merely serve to further define the subject matter of amendment independent claims 1 and 15, which themselves should be deemed patentable, Applicant submits that dependent claims 2 - 14 and 16 - 21, likewise should be deemed to patentably distinguish over the cited prior art. Reconsideration and withdrawal of the rejection of claims 2 - 14 and 16 - 21, and allowance thereof are respectfully solicited.

Applicant submits that the application, as a whole, is in a *prima facie* condition for allowance at this time, and reconsideration and allowance of the application, are respectfully solicited.